Metastatic Renal Cell Carcinoma in a Hemodialysis Patient with Acquired Renal Cystic Disease

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Dear Sir,

Acquired renal cystic disease (ARCD) develops in a substantial number of patients with advanced chronic renal failure. ARCD has been associated with the development of hemorrhagic complications and/or renal tumors. The exact incidence of renal tumors in ARCD is not well known but could be around 14%. However, the malignant potential of these neoplasms is said to be low, and very few cases of metastatic disease have been described [1–5]. The size of the tumor has been considered an important prognostic factor since tumors less than 3 cm in diameter rarely metastasize [6], and to our knowledge no tumor this small associated with ARCD has been demonstrated to produce metastasis. We report a hemodialysis patient with ARCD who died of metastatic disease from a 2-cm renal cell carcinoma.

A 58-year-old male with terminal chronic renal failure of uncertain etiology had been on hemodialysis for 4 years. Prior to entering the chronic hemodialysis program there was no evidence of renal cystic disease and an abdominal ultrasound examination had shown bilaterally shrunken kidneys without cysts. He was admitted to hospital with a 4-week history of poor general condition, coughing and dyspnea. Physical examination revealed a right pleural effusion and a 7-cm hepatomegaly. A pleural tap yielded a hemorrhagic exudate where mesothelial cells with some immature nuclei were seen. A pleural biopsy showed minimal fibrotic changes with some immature nuclei were seen. A pleural biopsy showed minimal fibrotic changes without evidence of neoplastic disease and fiberoptic bronchoscopy was normal. Pleuroscopy showed a suspicious whitish area in the apical region of the right parietal pleura. Histologic examination of material obtained from this area revealed epithelial malignant cells, the origin of which could not be determined. A liver biopsy disclosed macronodular liver cirrhosis and a small silicon-containing granuloma. An abdominal ultrasound and CT scan examination showed hepatomegaly without metastatic images, and bilaterally small kidneys with some cysts. Fig. 1. a Liver with multiple metastatic nodules, b Atrophic kidney with acquired renal cystic disease and a 20-mm solid mass in the lower pole (renal adenocarcinoma). c Detail of a pulmonary metastasis corresponding to a clear cell tumor originating from the renal adenocarcinoma.

Other tests included thoracic CT scan, fiberoptic gastros-copy, barium enema, thyroid scan and bone biopsy and failed to identify the primary tumor site. After a progressively downhill course
the patient died 7 weeks after admission. The autopsy showed atrophic end-stage kidneys, with multiple small cysts. There was a renal cell

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carcinoma at the lower pole of the left kidney. The maximal diameter of the tumor was 2 cm. Multiple metastases were demonstrated in bone, liver and lungs (fig. 1). The histologic appearance of these metastases was remarkable because of the presence of clear cells consistent with a diagnosis of primary renal cell adenocarcinoma. No other primary tumor site was identified.

The incidence of ARCD is directly proportional to the time on dialysis. It can be observed in approximately 40% of patients who have been on dialysis for 3 years [7–10] and its incidence progressively increases so that 90% of patients who have been on dialysis for 8 or more years will have ARCD [11].

There is also a correlation between ARCD and the development of renal tumors [11]. Although the exact incidence of renal tumors in ARCD is unknown, it could be around 14–20% [8–10, 12]. However, the malignant potential of these neoplasms is low and they generally display slow growth and few symptoms. The existence of metastases is unusual [1–5].

Our patient has two aspects of interest: first, he presented with metastases as the first clinical symptom and, second, the primary tumor was small, only 2 cm in diameter. This indicates that even small tumors developing on ARCD may have significant malignant potential, and stresses the need for considering this possibility in dialysis patients, particularly if they have been treated for a long period of time.
References